

RESOLUTION NO. 2016238

RE: AUTHORIZING COUNTY EXECUTIVE TO EXECUTE EASEMENT
BETWEEN THE COUNTY OF DUTCHESS AND THE DUTCHESS COUNTY
WATER AND WASTEWATER AUTHORITY PERTAINING TO THE
QUAKER HILLS WATER SYSTEM

Legislators MICCIO, BOLNER, TRUITT, FORMAN, and SAGLIANO and offer the following and moves its adoption:

WHEREAS, by Resolution No. 2015097, this Legislature authorized the County and the Dutchess County Water and Wastewater Authority ("WWA") to acquire and establish Zone "U", known as the Quaker Hills Water System in the Town of Hyde Park, Dutchess County, New York, and

WHEREAS, on or about June 1, 1998, the County and WWA entered into a Service Agreement wherein the WWA may cause Water Service to be provided to the various water districts throughout the County which agreement has, from time to time, been amended, and

WHEREAS, the WWA is requesting a permanent easement from the County in order to maintain and repair an existing water main and to construct a flushing hydrant for improvement of water quality, which will be constructed on Tax Parcel No. 133200-6266-19-671024-0000 by the WWA, and

WHEREAS, the WWA is requesting an easement on Tax Parcel No. 133200-6266-19-671024-0000, located at 539 North Quaker Lane in the Town of Hyde Park which is currently owned by the County, and

WHEREAS, a copy of the proposed easement is annexed hereto, now therefore, be it

RESOLVED, that the County Executive, or his designee, is authorized to execute the easement, in substantially the same form as annexed hereto, between the County of Dutchess and the Dutchess County Water and Wastewater Authority pertaining to the Quaker Hills Water System.

CA-132-16
CEB/kvh/G-1682
09/09/16
Fiscal Impact: See attached statement

STATE OF NEW YORK

ss:

COUNTY OF DUTCHESS

This is to certify that I, the undersigned Clerk of the Legislature of the County of Dutchess have compared the foregoing resolution with the original resolution now on file in the office of said clerk, and which was adopted by said Legislature on the 11th day of October 2016, and that the same is a true and correct transcript of said original resolution and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of said Legislature this 11th day of October 2016.

CAROLYN MORRIS, CLERK OF THE LEGISLATURE

FISCAL IMPACT STATEMENT

☒ NO FISCAL IMPACT PROJECTED

APPROPRIATION RESOLUTIONS (To be completed by requesting department)

Total Current Year Cost \$ _____

Total Current Year Revenue \$ _____
and Source

Source of County Funds (check one): ☐ Existing Appropriations, ☐ Contingency,
☐ Transfer of Existing Appropriations, ☐ Additional Appropriations, ☐ Other (explain).

Identify Line Items(s):

Related Expenses: Amount \$ _____

Nature/Reason:

Anticipated Savings to County: _____

Net County Cost (this year): _____
Over Five Years: _____

Additional Comments/Explanation:

Prepared by: Bridget Barclay

Prepared On: 9-07-2016

Water Distribution Main Easement
Quaker Hills Water System

This Indenture is made and entered into this ___ day of _____, 2016 by and between County of Dutchess, a municipal corporation with its principal offices at 22 Market Street, Poughkeepsie, NY 12601 (the "Grantor") and the Dutchess County Water and Wastewater Authority, a public benefit corporation created pursuant to Title 6-C Article Five of the Public Authorities Law, as amended (the "Act"), of the State of New York with an office at 27 High Street, Poughkeepsie, New York 12601, (the "Grantees").

WITNESSETH

The Grantor, for and in consideration of the sum of \$1.00 and other good and valuable consideration paid by the Grantees, the receipt and sufficiency of which are hereby acknowledged, does hereby grant, convey, and release unto the Grantees, its successors and/or assigns an easement to install, maintain, repair and replace a water distribution main and related appurtenances under and through the real property of the Grantor situate in the Town of Hyde Park, County of Dutchess and State of New York (the "Property") in the easement area more particularly described in Exhibit "A" annexed hereto (the "Easement Area").

The Property of Grantor subject to this easement is described in a deed recorded on August 5, 2015 as Tax Parcel Identification No. 133200-6266-19-671024-0000 in the Dutchess County Clerk's Office as Document No. 02-2015-4734.

The Grantor grants and conveys to the Grantees a perpetual easement to enter the Easement Area for the purposes of installing, maintaining, repairing and replacing a water distribution main and related appurtenances within, under, and through the Easement Area from time to time, as the Grantees may deem necessary. The said water distribution main and appurtenances shall at all times remain the property of the Grantee and under its exclusive control and supervision, and the Grantor shall not interfere with or cause injury or damage to said water distribution main and appurtenances or interfere with the rights granted to the Grantees hereunder. The Grantor agrees that it shall place no permanent structures, fences or trees on or within the Easement Area.

The Grantees shall indemnify and hold harmless the Grantor, their successors, and assigns from any claims arising out of any action taken on the Property by the Grantees, their employees, or agents in connection with the easement granted to the Grantees by the Grantor, including but not limited to, action taken to install, repair, maintain and replace the water distribution main and related appurtenances.

The Grantees shall exercise good faith efforts to perform the installation, maintenance, repair and replacement of the water distribution main and appurtenances without materially interfering with the use and enjoyment of the Grantor of the Property. The Grantees shall restore the surface of the Easement Area and any other portion of the Property disturbed by the Grantees in the exercise of its rights hereunder to a similar condition such surface was in prior to the Grantees installing any water distribution main or related appurtenances and any maintenance, repair or

Exhibit A
Description

SURVEY DESCRIPTION

EASEMENT

**TO DUTCHESS COUNTY WATER AND WASTEWATER AUTHORITY
OVER LOT # 1 AND 2 OF FILED MAP NO. 3502**

ALL that certain plot, piece or parcel of land situate, lying and being in the Town of Hyde Park, Dutchess County, State of New York, and being more particularly bounded and described as follows;

BEGINNING at a point being the northeasterly corner of the herein described easement, said point being distant 162.28 feet as measured on a course of N 86°00'00" W from the northeasterly corner of Lot #2 as shown on a certain map entitled "Quaker Hill Estates, Property of D. Cochran & A. Zolko" filed in the office of the Dutchess County Clerk on June 2, 1967 as filed map #3502; thence through Lot #2 and Lot #1 as shown on said filed map, S 00°35'29" W a distance of 69.58 feet, S 89°24'31" E a distance of 5.00 feet, S 00°35'29" W a distance of 23.60 feet, S 45°35'57" E a distance of 70.38 feet and N 89°24'03" E a distance of 113.74 feet to a point on the westerly side of North Quaker Lane; thence along North Quaker Lane, S 04°00'50" E a distance of 30.05 feet to a point, said point being distant 62.24 feet as measured on a course of N 04°00'50" W from the southeasterly corner of said lot #1; thence through said Lot #1 and Lot #2, S 89°24'03" W a distance of 127.96 feet, N 45°35'57" W a distance of 95.60 feet, N 00°35'29" E a distance of 36.40 feet, S 89°24'31" E a distance of 5.00 feet and N 00°35'29" E a distance of 70.77 feet to a point on the northerly line of said Lot #2; thence along Lot #2, S 86°00'00" E a distance of 20.04 feet to the point or place of BEGINNING.

August 25, 2016

RESOLUTION NO. 2015097

RE: ESTABLISHING ZONE "U" ZONE OF ASSESSMENT IN
THE DUTCHESS COUNTY WATER DISTRICT IN THE
TOWN OF HYDE PARK, DUTCHESS COUNTY

Legislators MICCIO, SAGLIANO, PERKINS, FARLEY, IGNAFFO, and
STRAWINSKI offer the following and move its adoption:

WHEREAS, the New York State Legislature, by Chapter 592 of the Laws of 1991 (§1142, Public Authorities Law), created the Dutchess County Water & Wastewater Authority (WWA), and established the Dutchess County Water District covering all the areas within the boundaries of Dutchess County, and

WHEREAS, the WWA is entering into an Agreement with the Town of Hyde Park, owner of the Quaker Hills Water System, regarding the WWA's acquisition of that system which is located in the Town of Hyde Park, and

WHEREAS, the WWA's ability to close on this acquisition and provide water service to the customers of the Quaker Hills Water System is contingent on the creation of a Water District Zone of Assessment encompassing all properties in the said water system, which will include a total of one hundred and fifteen (115) tax parcels of which one hundred and nine (109) are developed residential properties, one is a vacant residential lot, one is the site of the water treatment facility, and four are undevelopable lots, and

WHEREAS, the WWA has presented to this Legislature a notice of project pursuant to Section 1124 of the Public Authorities Law which outlines the WWA's plan to establish Zone of Assessment "U" for the Quaker Hills Water System, located in the Town of Hyde Park, and

WHEREAS, this Legislature has before it a Map, Plan and Report entitled "Map, Plan and Report, County Water District Zone of Assessment "U" which was submitted to it by the WWA with the Notice of Project pursuant to Section 1124, and

WHEREAS, WWA proposes to enter into a Twelfth Restatement of the Amended Service Agreement with Dutchess County (County), on behalf of the proposed Zone of Assessment U whereby the District will provide water service to customers within the Zone at rates established by WWA, and

WHEREAS, said Map, Plan and Report identifies the parcels to be included in the Zone of Assessment, describes the infrastructure to be used to provide water service, and provides the estimated annual cost for water service for the typical property in the proposed Zone of Assessment, and

WHEREAS, the first year cost to the typical single family home is estimated to be four hundred and sixty-three dollars (\$463), and

WHEREAS, this Legislature must create Zone of Assessment U covering the area of the Quaker Hills Water System described in "Attachment A," and

WHEREAS, this Legislature conducted a public hearing on this proposal on April 13, 2015, and heard all persons interested, and

WHEREAS, the establishment of said Zone of Assessment U will ensure an efficient water system for all properties within the service area, now, therefore, be it


RESOLVED that this Legislature hereby waives the notice provisions of Section 1124 of the Public Authorities Law and by this Resolution consents to this project, and be it further

RESOLVED, that it is hereby determined that all the property and property owners within the proposed Zone of Assessment U are benefited thereby and all the property and property owners benefited are included within the proposed Zone of Assessment U and it is in the public interest to create the Zone of Assessment U in the County Water District, and be it further

RESOLVED, that a Zone of Assessment in the County Water District, to be known as Zone of Assessment U in the Town of Hyde Park, more particularly described in "Attachment A" attached hereto, is hereby established, and be it further

RESOLVED, that this resolution is subject to permissive referendum.

CA-069-15
CRC/BB/kvh/G-1217-N
3/10/15
Fiscal Impact: See attached statement

APPROVED

MARCUS J. MOLINARO
COUNTY EXECUTIVE
Date 4/20/2015

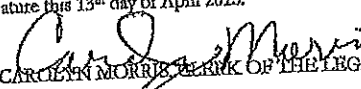
STATE OF NEW YORK

ss:

COUNTY OF DUTCHESS

This is to certify that I, the undersigned Clerk of the Legislature of the County of Dutchess have compared the foregoing resolution with the original resolution now on file in the office of said clerk, and which was adopted by said Legislature on the 13th day of April 2015, and that the same is a true and correct transcript of said original resolution and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of said Legislature this 13th day of April 2015.


CAROLYN MORRIS, CLERK OF THE LEGISLATURE

FISCAL IMPACT STATEMENT

☒ NO FISCAL IMPACT PROJECTED

APPROPRIATION RESOLUTIONS (To be completed by requesting department)

Total Current Year Cost \$ _____

Total Current Year Revenue \$ _____
and Source

Source of County Funds (check one): ☐ Existing Appropriations, ☐ Contingency,
☐ Transfer of Existing Appropriations, ☐ Additional Appropriations, ☐ Other (explain).

Identify Line Items(s):

Related Expenses: Amount \$ _____
Nature/Reason:

Anticipated Savings to County: _____

Net County Cost (this year): _____
Over Five Years: _____

Additional Comments/Explanation:

Prepared by: Bridget Barclay, DCWWA

Prepared On: 03/09/15

APPENDIX "A"

DUTCHESS COUNTY WATER DISTRICT ZONE OF ASSESSMENT "U" *Quaker Hills Water System*

DESCRIPTION OF ZONE

(map and parcel listing)

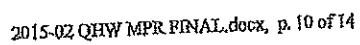
The Dutchess County Water District Zone of Assessment "U" shall include all those tax parcels presently indicated on the attached boundary map. These parcels are further described by the following list of tax parcel grid numbers:

6266-19-562237-0000	6266-18-442186-0000	6266-19-562175-0000
6266-19-584238-0000	6266-18-492207-0000	6266-18-459230-0000
6266-18-456241-0000	6266-18-463218-0000	6266-18-473173-0000
6266-18-483237-0000	6266-19-536197-0000	6266-18-492176-0000
6266-19-518246-0000	6266-18-466204-0000	6266-19-536216-0000
6266-18-425246-0000	6266-18-445141-0000	6266-19-514219-0000
6266-19-539093-0000	6266-18-447134-0000	6266-19-537235-0000
6266-19-635130-0000	6266-19-621095-0000	6266-19-576077-0000
6266-19-513131-0000	6266-18-470189-0000	6266-18-467048-0000
6266-19-509106-0000	6266-18-476118-0000	6266-19-671024-0000
6266-18-494161-0000	6266-18-476133-0000	6266-19-665045-0000
6266-19-524153-0000	6266-19-604095-0000	6266-19-573095-0000
6266-19-660099-0000	6266-19-633100-0000	6266-18-452054-0000
6266-18-499142-0000	6266-19-516179-0000	6266-19-594030-0000
6266-18-446149-0000	6266-19-599125-0000	6266-19-573085-0000
6266-18-437207-0000	6266-18-439197-0000	6266-19-668036-0000
6266-19-644105-0000	6266-19-522091-0000	6266-19-654085-0000
6266-18-447122-0000	6266-19-654134-0000	6266-19-592036-0000
6266-18-432219-0000	6266-18-474154-0000	6266-19-531067-0000
6266-19-555216-0000	6266-19-515206-0000	6266-19-659065-0000
6266-18-447100-0000	6266-19-540129-0000	6266-18-480046-0000
6266-19-517166-0000	6266-18-447111-0000	6266-19-506080-0000
6266-19-554122-0000	6266-19-558194-0000	6266-19-630021-0000
6266-19-542155-0000	6266-18-429232-0000	6266-19-590048-0000
6266-19-525122-0000	6266-19-544109-0000	6266-18-487082-0000
6266-19-573110-0000	6266-19-515193-0000	6266-19-665075-0000
6266-19-540178-0000	6266-18-489218-0000	6266-18-451075-0000
6266-18-491191-0000	6266-18-448169-0000	6266-19-583058-0000
6266-18-475094-0000	6266-18-446159-0000	6266-19-621073-0000
6266-18-446178-0000	6266-18-495094-0000	6266-19-545052-0000

6266-19-595023-0000
6266-19-625046-0000
6266-19-577066-0000
6266-19-529040-0000
6266-19-543070-0000
6266-19-563025-0000
6266-19-550042-0000
6266-18-449088-0000
6266-19-662055-0000

6266-19-558033-0000
6266-19-513039-0000
6266-19-589106-0000
6266-14-499253-0000
6266-15-563263-0000
6266-14-451253-0000
6266-15-551261-0000
6266-15-590258-0000
6266-15-579264-0000

6266-15-541251-0000
6266-18-500120-0000
6266-18-495041-0000
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DUTCHESS COUNTY

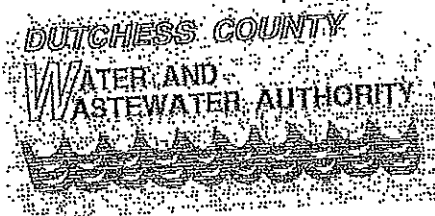
**Proposed County Water District
Zone of Assessment U**

**(Quaker Hills Water System)
Hyde Park, NY**

MAP, PLAN AND REPORT

February 2015

**Dutchess County Water and Wastewater Authority
Poughkeepsie, NY**



February 2015

**PROPOSED COUNTY WATER DISTRICT ZONE OF ASSESSMENT U
(QUAKER HILLS WATER)**

MAP, PLAN AND REPORT

INTRODUCTION

This Map, Plan and Report contains the information required for the formation of the proposed County Water District Zone of Assessment U, which includes an area of approximately one hundred (100) acres located on the west side of North Quaker Land, one-quarter mile north of Rusky Lane in the Town of Hyde Park, NY.

Upon successful formation of proposed County Water District Zone of Assessment U (the "Zone") by the Dutchess County Legislature, ownership and operation of the Quaker Hills Water System will transfer to the Dutchess County Water and Wastewater Authority ("DCWWA", "Authority") in accordance with the terms and conditions set forth in an agreement between the Authority and the Town of Hyde Park (Town.) Information provided herein includes the proposed Zone's boundaries and a list of the tax parcels that will comprise the future Zone, as well as a description of the current and proposed infrastructure by which potable water will be produced, treated and delivered to customers.

In addition, budgetary estimates for the first year operation and maintenance costs, and capital costs, as well as a cost allocation formula, have been included with this report.

The Dutchess County Water and Wastewater Authority will enter into a contract (the "Service Agreement") with Dutchess County on behalf of the Zone for the purpose of administering the retail sale of water services to all properties within the proposed Zone, with such service to be provided through the water system facilities as described below. The Authority will administer the Zone pursuant to guidelines established by the Service Agreement and collect water revenues. Water service rates will be set annually by the Authority.

HISTORY

According to available system documentation from the Town of Hyde Park, the Quaker Hill Water Corporation developed the central water system during the period of 1965 to 1970. Due to poor water distribution main installation practices, the water system experienced extensive water main leaks by 1976. By 1978 the Dutchess County Department of Health (DOH) assumed operational control of the system from the Quaker Hill Water Corporation. Circa 1980 the Town acquired the water system, forming the Quaker Hill Water District. The water system's sole hydropneumatic tank was replaced around 1998.

In 2011 the Town of Hyde Park was awarded a Local Government Efficiency Grant from the New York State Department of State. The purpose of the grant was to support an independent evaluation of the Quaker Hills Water System, with a focus on opportunities to streamline and improve the service delivery. The grant provided for an engineering evaluation of the system and consideration of the option to transfer the assets and management of the system to the DCWWA. Pursuant to the grant, the Town completed a Reorganization Study and Proposed Dissolution Plan for the Quaker Hills Water District (February, 2015) and, on February 19, 2015 conducted a public hearing on the Study and Plan. On February 23, 2015 the Town Board passed a resolution of intent to transfer ownership and management of the Town's water and sewer systems, including Quaker Hills Water, to the DCWWA.

COUNTY WATER DISTRICT ZONE OF ASSESSMENT U

The proposed County Water District Zone of Assessment U delineated on the attached map and list of tax parcels (Appendix "A"), presently includes a total of one hundred and fifteen (115) tax parcels of which one hundred and nine (109) are developed residential properties, one is a vacant residential lot, one is the site of the water treatment facility, and four are undevelopable lots. The development, excluding the single vacant lot, is built out and all residences are occupied.

PHYSICAL FACILITIES

As the Quaker Hills Water System is now over forty nine years old, and with minimal reconstruction projects undertaken under the Town's ownership, it is generally recognized that most system components are beyond their typical service life. The 2014 engineering evaluation noted concerns regarding the condition of the treatment building and distribution system, and identified several mechanical and safety issues. While the water supply of the District is of very high quality, the physical assets are outdated and will require some investments in the near future.

Water Supply and Treatment System

The water treatment facilities are located on an approximately seven (7) acre parcel with adjacent access road. The main parcel provides a 200-foot radius of control surrounding the two wells. The ground water from one of two wells at a time is disinfected and stored in a buried hydropneumatic tank. Switching from one well to another is a manual operation. Water is then sent to the system on demand using a system supply pump and the hydropneumatic tank. There are no booster stations within the distribution system. In 2009 the DOH identified the water treatment building as structurally unsound, and has issued repeated violations for the condition of the building. During 2010 the Town engineer issued a report evaluating the treatment building's condition while reviewing options for repair or replacement.

Transmission and Distribution

The distribution system includes approximately 9,500 feet of 6-inch cast iron pipe installed during the 1970's and reputedly located in the center of the roadways, excluding one section of water main reputedly running through back lots. Service laterals include 3/4-inch

copper to individual dwellings within the water system. Plastic services have also been reported. Service connections are metered, but meters are original to the system, are reported to be non-functioning and are not being read. There are currently four flushing hydrants located in the system. The water system as originally designed and built does not provide fire protection.

PROPERTY ISSUES

The distribution system water mains are generally located within the right-of-way for the roads in the development. However, one segment of pipe runs through several parcels from Quaker Hill Drive to serve the homes that parallel North Quaker Lane. No easement(s) has been identified for this area and will require future research.

SOURCE CAPACITY AND QUALITY EVALUATION

The District's two wells produce on average of approximately 24,428 gallons per day (gpd), or 17 gallons per minute (gpm.) There are 109 properties presently served with water from the treatment plant with 109 service connections. This indicates the use per residence of 224 gpd which is elevated above typical residential flows ranging between 150-165 gpd. The District appears to have very good water quality, with no major water quality issues.

FUTURE DEMAND

The development is built out and all residences are occupied excluding a single vacant but developable lot. The system has sufficient capacity to serve this additional parcel should it be developed. There are no current or anticipated plans to expand the Water System.

FUTURE CAPITAL ISSUES

An engineering evaluation of the Quaker Hills Water System was completed as part of the Reorganization Study, and is included as Appendix A to the Study. The engineering evaluation included recommendations for system improvements, organized by priority level.

Treatment Building

The water treatment building has been identified as having significant structural issues and is in poor condition. The DOH has issued ongoing violations for failure to exercise care and due diligence in the operation and maintenance of a public water system based on the condition of the treatment plant and building. There is cracking of the mortar joints and concrete masonry. Occupancy of the building during an earthquake or significant wind or flooding event would be unsafe. The asphalt shingle roof is heavily deteriorated and approaching a failed condition. Settlement of the building and floor slab has resulted in misalignments of the piping system and stress on existing piping system joints. Cracks in the floor slab leave the wells vulnerable to contamination. The building has been subjected to flooding, which has also impacted the life expectancy of the structure and its equipment. During flooding in 2011 District representatives stated that flood waters rose to just below the electrical equipment inside the building, and the generator and transfer switch were partially submerged. The evaluating engineer has recommend replacement of the building with a new treatment building.

Distribution System

According to District records, the water main was set directly on shale, with no gravel bedding. This has resulted in a multitude of failures over the years, with major problems from leakage reported as early as 1976 when significant failures resulted in an average daily production of over 240,000 gpd. It has also been noted that in general the water main was not installed to five feet below ground surface, and on average has just over three feet of cover, rendering the piping susceptible to damage from frost penetration. Based on the installation conditions and the history of leaks, the potential exists for additional substantial leaks and major pipe breaks.

Leak detection programs have been conducted in the past but have had minimal success because of the fractured and freely draining nature of the shale. The engineering evaluation recommends that the location and extent of repairs be recorded to better track where the leaks are occurring and identify any "hot spots" for failures. Using this data, in the future the District can proceed with targeted water main replacement projects. Pipe lining, a rehabilitation method that utilizes a cured-in-place liner to renovate pipes without excavation, may be a suitable approach for the District.

The location of the hydrants provides an adequate means of flushing all areas of the system with the exception to the entrance to Quaker Hills Drive.

It was reported by customers that meters in homes on the top of Guernsey Drive spin backwards when the system is down, indicating backflow into the system; this is a potential source of contamination in the system.

DCWWA proposes to undertake the following improvements during the first year of system ownership, funded by current dollars and system fund balance:

- Extend Well #2 casing above flood zone
- Install locking cap on Well #2
- Regrade around Well #2
- Provide fire extinguisher
- Provide eye wash station
- Install machine guard for compressor
- Replace broken exterior LB (electrical conduit elbow fitting) conduit fitting

Total Estimated Expense: \$5,950

The Quaker Hills Water System has a fund balance of approximately \$14,136 as reported by the Town at the end of January 2015.

DCWWA proposes to analyze the history of water main leaks to determine if there are "hot spots" that could be targeted for pre-emptive pipe replacement and/or "trenchless" rehabilitation methods such as pipe lining. Further engineering evaluation is required to determine the most cost-effective solution for the replacement of the treatment building. DCWWA anticipates funding the cost of the engineering work through a short-term bond anticipation note, to be rolled into the long term borrowing to fund the selected construction project. It is recommended that the long term bonding also include the cost of the additional well improvements, installation of

customer backflow preventers, addition of a flushing hydrant at the end of Quaker Hill Road, resolution of any easement issues and priority pipe replacements. DCWWA would seek grant and low-interest loan funding to help reduce the cost impact of the project on the customers.

CAPITAL COSTS AND ALLOCATIONS

DCWWA intends to issue a bond anticipation note (BAN) for an estimated \$250,000 to fund the evaluation of options and engineering design for the resolution of the treatment building issues and the additional well improvements, installation of customer backflow preventers, addition of a flushing hydrant at the end of Quaker Hill Road, resolution of any easement issues and priority pipe replacements. Assuming an interest only payment, with the principal to be rolled into a subsequent long-term borrowing, the first year capital cost would be approximately \$3,300. The amount of the long term borrowing won't be known until an approach to the building issues has been selected.

Annual debt expenses will be allocated equitably among all parcels within the District through the assignment of benefit units to each parcel. The methodology for the assignment of benefit units is attached (see Appendix C.) All benefit units would be charged at the same rate. The annual benefit assessment would appear on the respective property owner's yearly property tax bill.

Application of the Benefit Assessment Methodology to the current district parcels results in a total of 1,106 benefit units within the proposed Zone of Assessment. Apportionment of the anticipated capital cost of \$3,300 across the calculated number of benefit units results in a per benefit unit cost of three dollars (\$3.00), or thirty dollars (\$30.00) for a typical single family residence. It is anticipated this expense would appear on the 2017 property tax bill (second year of operation.)

OPERATION AND MAINTENANCE (O&M) COSTS

The O&M Budget Projection is the total cost to the DCWWA to operate the Quaker Hills Water System; labor, electricity, insurance, typical repairs and other ongoing costs. The DCWWA has developed an O&M budget projection to illustrate estimated First Year costs of the Quaker Hills Water System under Authority ownership, based on the Authority's prior operating expenses and history for comparable size water systems, and possible anticipated repairs to the system. A copy of the O&M budget projection, using 2015 as a base year for demonstration purposes of those First Year costs, has been included as Appendix "B". The first year operational cost (2015 dollars) is estimated at \$51,500.00.

The proposed rate structure based on the O & M budget projection includes income from a proposed flat rate fixed amount, assuming one hundred and nine customers, of \$463.00 (\$115.75 per quarter), and typical annual penalties (estimated at \$1,000.00.) Should the system ownership be transferred mid-year, the budget would be pro-rated for the portion of the year DCWWA would own the system. All future O&M system budgets, rates, fees and other charges are reviewed annually and subject to change by the DCWWA Board of Directors.

CONNECTION CHARGES

The Quaker Hills development has reached full build out excluding a single vacant parcel. At the time the Map, Plan and Report was drafted, the typical residential connection charge was \$500.

Annual Cost per a Typical Property - First Year: \$463

The total annual cost for a typical property in a zone is generally a combination of the long-term capital charges (debt service) and water usage charges. In the proposed Zone a typical property will be a single family dwelling unit. Given the assumptions and estimates described above, the projected "First Year" total cost for a typical single family dwelling in County Water District Zone of Assessment U will be four hundred and sixty three (\$463) dollars for O&M expenses. A capital assessment of \$30.00 is projected to appear on the 2017 property tax bill. A system budget based on these rates will build appropriate fund balances to maintain the public water system in good working order.

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APPENDICES

Appendix A - Description of County District Zone of Assessment U (Map & Parcel List)

Appendix B - Proposed Operation & Maintenance Budget

Appendix C - Proposed Benefit Assessment Methodology

APPENDIX "A"

DUTCHESS COUNTY WATER DISTRICT ZONE OF ASSESSMENT "U" *Quaker Hills Water System*

DESCRIPTION OF ZONE

(map and parcel listing)

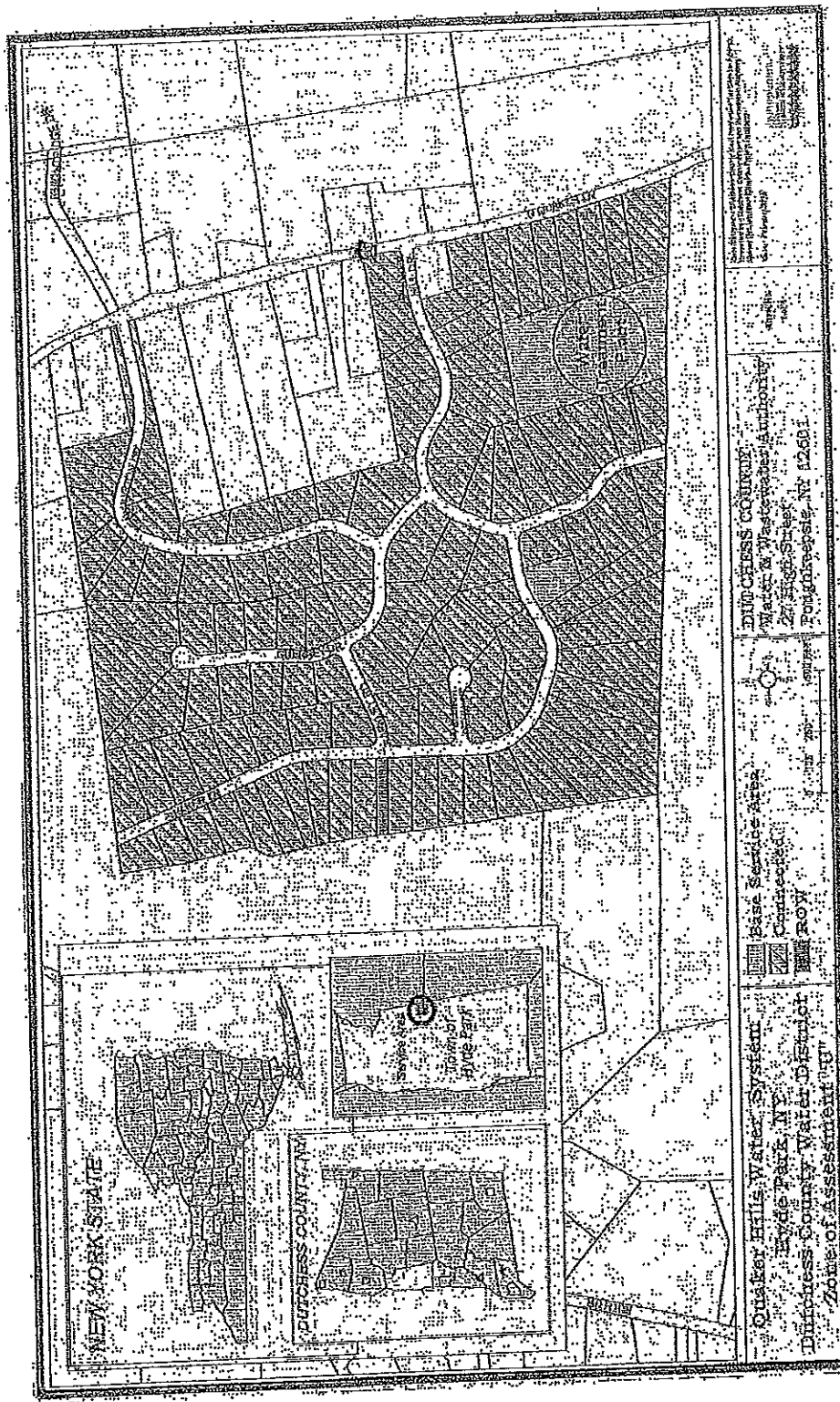
The Dutchess County Water District Zone of Assessment "U" shall include all those tax parcels presently indicated on the attached boundary map. These parcels are further described by the following list of tax parcel grid numbers:

6266-19-562237-0000	6266-18-442186-0000	6266-19-562175-0000
6266-19-584238-0000	6266-18-492207-0000	6266-18-459230-0000
6266-18-456241-0000	6266-18-463218-0000	6266-18-473173-0000
6266-18-483237-0000	6266-19-536197-0000	6266-18-492176-0000
6266-19-518246-0000	6266-18-466204-0000	6266-19-536216-0000
6266-18-425246-0000	6266-18-445141-0000	6266-19-514219-0000
6266-19-539093-0000	6266-18-447134-0000	6266-19-537235-0000
6266-19-635130-0000	6266-19-621095-0000	6266-19-576077-0000
6266-19-513131-0000	6266-18-470189-0000	6266-18-467048-0000
6266-19-509106-0000	6266-18-476118-0000	6266-19-671024-0000
6266-18-494161-0000	6266-18-476133-0000	6266-19-665045-0000
6266-19-524153-0000	6266-19-604095-0000	6266-19-573095-0000
6266-19-660099-0000	6266-19-633100-0000	6266-18-452054-0000
6266-18-499142-0000	6266-19-516179-0000	6266-19-594030-0000
6266-18-446149-0000	6266-19-599125-0000	6266-19-573085-0000
6266-18-437207-0000	6266-18-439197-0000	6266-19-668036-0000
6266-19-644105-0000	6266-19-522091-0000	6266-19-654085-0000
6266-18-447122-0000	6266-19-654134-0000	6266-19-592036-0000
6266-18-432219-0000	6266-18-474154-0000	6266-19-531067-0000
6266-19-555216-0000	6266-19-515206-0000	6266-19-659065-0000
6266-18-447100-0000	6266-19-540129-0000	6266-18-480046-0000
6266-19-517166-0000	6266-18-447111-0000	6266-19-506080-0000
6266-19-554122-0000	6266-19-558194-0000	6266-19-630021-0000
6266-19-542155-0000	6266-18-429232-0000	6266-19-590048-0000
6266-19-525122-0000	6266-19-544109-0000	6266-18-487082-0000
6266-19-573110-0000	6266-19-515193-0000	6266-19-665075-0000
6266-19-540178-0000	6266-18-489218-0000	6266-18-451075-0000
6266-18-491191-0000	6266-18-448169-0000	6266-19-583058-0000
6266-18-475094-0000	6266-18-446159-0000	6266-19-621073-0000
6266-18-446178-0000	6266-18-495094-0000	6266-19-545052-0000

6266-19-595023-0000
6266-19-625046-0000
6266-19-577066-0000
6266-19-529040-0000
6266-19-543070-0000
6266-19-563025-0000
6266-19-550042-0000
6266-18-449088-0000
6266-19-662055-0000

6266-19-558033-0000
6266-19-513039-0000
6266-19-589106-0000
6266-14-499253-0000
6266-15-563263-0000
6266-14-451253-0000
6266-15-551261-0000
6266-15-590258-0000
6266-15-579264-0000

6266-15-541251-0000
6266-18-500120-0000
6266-18-495041-0000
6266-19-619124-0000
6266-19-561143-0000
6266-19-565158-0000
6266-19-573132-0000



APPENDIX "B"

Proposed

Operation & Maintenance Costs

Illustrative of projected first year O & M expenses, revenues and rates

for customers of

Quaker Hills Water System (County District Zone of Assessment U)

DCWWA 2015 PROPOSED BUDGET
QUAKER HILLS WATER DISTRICT

Beginning Fund Balance	14,136
Annual Expenses	51,489
Power/Chemicals	11,802
Operations	10,580
ERM	15,100
Lab/Sampling/Permit	2,324
Administration	10,043
Legal/Engineering	500
Insurance	1,139
Annual Revenues	51,489
Water Sales/Penalties	51,489
Transfer from Fund Balance	-
Ending Fund Balance	14,136

APPENDIX "C"

Quaker Hills Water System (County District Zone of Assessment U)

Proposed Benefit Assessment Methodology

COUNTY WATER DISTRICT
ZONES OF ASSESSMENT C, D, H, M and U (Not J or K)

PART COUNTY SEWER DISTRICT #1, 2, 3 & 6

BENEFIT ASSESSMENT METHODOLOGY

DEVELOPED LAND (Use the higher of either LAND USE/WATER USE or ACREAGE)

LAND USE/WATER USE

RESIDENTIAL

FIRST DWELLING UNIT

10

EACH ADDITIONAL DWELLING UNIT

8

COMMERCIAL/INSTITUTIONAL:

FIRST 500 GPD WATER USAGE

20

EACH ADDITIONAL 100 GPD

4

ACREAGE

FIRST 2 ACRES

10

EACH ADDITIONAL WHOLE ACRE

2

UNDEVELOPED LAND

FIRST 2 ACRES

8

EACH ADDITIONAL WHOLE ACRE

2

STATE PARK LANDS

FIRST 500 GPD WATER USAGE

20

EACH ADDITIONAL 100 GPD

4